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EXAMINER

JENNISON, BRIAN W

ART UNIT

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3742

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,539	<b>Applicant(s)</b> SCANDELLA ET AL.	
	<b>Examiner</b> BRIAN JENNISON	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 38-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***Response to Arguments***

1. Applicant's arguments filed 9/18/2009 have been fully considered but they are not persuasive. See Remarks Below.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 38-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al (US 5,362,937) in view of Nadeau et al (US 4,733,051) and Carpenter (US 2,427,350).**

Browne teaches:

**Regarding Claims 38 and 47:** A apparatus for and method of manufacturing a hardfaced plate by applying a cladding to a surface of a substrate by arc welding **(overlying weld metal, a hard-wearing material, onto metal plates or a substrate done by passing electricity through an electrode. See Column 1, lines 4-10)**, the method comprising moving the substrate **(The metal plates are moved by drive wheels 31 in a given direction relative to the welding gun 43. See Column 4, Lines 1-3)** and a continuous arc welding wire feed relative to each other **(welding wire 48 is fed through weld heads 49, relative to the plate 10, with electricity supplied to**

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**them for arc welding. See Column 4, Lines 32-35),** wherein the welding wire feed is in a direction generally transverse to said given direction of relative movement. **(Fig 1 shows the wire 48 being fed generally sideways to the plate 10. The surface is horizontal and the wire feed is vertical. The wire is clearly fed in a transverse direction since the path of the wire and the surface of the substrate make a cross, this being the definition of transverse. Fig 1 also shows the welding gun 43 mounted relative to the substrate in a transverse direction as described with the wire. The weld metal will solidify on the surface)**

Browne fails to teach:

**Regarding Claims 38, 47, 49:** The substrate is cylindrical and rotated about a horizontal axis and moving the weld gun relative to said cylindrical substrate in a direction generally parallel to said horizontal axis.

the welding gun being mounted such that a welding tip thereof is located below an uppermost level of the surface of the rotating cylindrical substrate; melting the welding wire to provide molten hard-wearing material on the surface of the rotating cylindrical substrate at a location below the uppermost level of the surface of the rotating cylindrical substrate such that the molten material is moved upwards by the rotation of the cylindrical substrate; and solidifying the molten hard-wearing material to form the cladding on the surface of the cylindrical substrate.

**Regarding Claims 46 and 49:** The adjustable pivoting of the arm.

Browne teaches:

**Regarding Claims 39 and 48:** Fig 1 shows the wire 48 being fed from the top side to the substrate 10 to be clad at an acute angle, with the gun also mounted at an acute angle as described above.

**Regarding Claims 40 and 50-51:** Fig 3 shows a plurality of weld beads being applied side by side and Fig 1 show the weld bead applied continuously.

**Regarding Claims 44-45, 58-61:** The weld head assembly 30 has a reciprocating carrier 40 for transverse reciprocation or oscillation of the weld head in relation to the surface of plate 10 with the reciprocating carrier being the means for moving the welding gun 43.

Browne fails to teach:

**Regarding Claims 41, 52-53:** A method wherein the profile(s) of the weld bead(s) is monitored.

**Regarding Claim 42, 54-55:** A method wherein said monitoring is carried out as part of a procedure to maintain a desired profile for the cladding.

**Regarding Claims 43, 56-57:** A method wherein at least one of the welding current, arc voltage, relative welding gun and substrate speeds, gun angle and stickout distances is adjusted.

Nadeau teaches:

**Regarding Claims 38, 46, 47, 49:** Fig 1 clearly shows a pipe, which is a cylindrical surface to be clad, the substrate being cylindrical and rotated. The arm is pivotally mounted relative to the cylindrical substrate as shown in Fig 1 and the cladding is moved upwards by the rotation of the pipe since the welding gun is located below the uppermost level of the cylindrical substrate. **See Column 3, Lines 30-40.**

**Regarding Claims 41, 52-53:** monitoring the weld bead depth. **See Column 5, Lines 19-30**

**Regarding Claims 42, 54-55:** the monitoring is carried out to maintain a desired weld bead depth and is capable of being applied to cladding. **See Column 5, Lines 25-30.**

**Regarding Claims 43, 56-57:** the working parameters are adjusted based on monitoring, including travel speed, wire feed rate, arc voltage, pivoting the welding arm, and moving it towards or away from the substrate. **See Column 5, Lines 45-60**

In view of Nadeau et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Browne et al, the weld bead monitoring for a desired cladding profile, the working parameter adjustment, arc voltage, gun speed, gun angle since Nadeau teaches monitoring the depth of a weld

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bead to maintain a desired height and adjusting the gun travel speed, arc voltage and pivot of the arm for comparing the depth of a weld and adjusting the weld parameters to keep the weld depth at a desired depth.

Carpenter et al teaches:

**Regarding Claims 38, 47, 49:** Fig 4 shows the sheet which has been formed into a cylinder 10 rotating around a horizontal axis with cladding being applied by arc welding at the surface of the substrate. Fig 4 shows a rotatable means 18 for receiving a cylindrical substrate 10 and rotating it around a horizontal axis with a means for applying cladding to the surface of the cylindrical substrate. Figs 4 and 7 also show the welding rod 100 being located below the uppermost level of the surface of the rotating cylinder. Fig 4 shows the welding gun 58 located on a carriage for moving the welding head parallel to the cylindrical substrate. **See Column 3, Lines 29-60.**

In view of Carpenter et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Browne as modified by Nadeau, the forming the substrate into a cylindrical shape, rotating the so-formed cylindrical substrate about a substantially horizontal axis, rotating substrate at a level below the uppermost level of the rotating cylindrical substrate, rotatable means arranged to receive thereon a substrate to be clad, means for rotating the rotatable means, and hence a substrate received thereon, about a generally horizontal axis, and means arranged to apply, in use, of the rotating substrate at a level below the

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uppermost region of the rotating substrate surface since, Carpenter teaches the sheet formed into a cylinder and rotating it around a horizontal axis a rotatable means for receiving a cylindrical substrate so a continuous cladding, with uniform thickness may be continuously applied to the cylindrical surface for strengthening the cylinder using arc welding.

### **Remarks**

Amended portion of claims have been responded to in the rejections above.

In regards to applicant's argument on page 8 of the reply referencing Browne teaching away from cylindrical rotating substrates; Browne is not relied upon for the teachings of the cylinder and rotation. Furthermore, Browne states that welding or cladding during the rotation of a cylindrical substrate is possible.

In regards to applicants arguments on page 8 of the reply referencing Nadeau not teaching cladding formed on the pipe; Nadeau teaches a weld pool formed on a rotating cylinder. The claim does not require a specific form of cladding, only a hard wearing material, which is formed once the weld pool solidifies.

4. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the pipe having been formed from a sheet) are not recited in the rejected claim(s).



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Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

5. In response to applicant's arguments, on page 9, against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Three references are combined and only two are argued against at a time. Furthermore, Carpenter and Nadeau both show the welding gun being mounted below the uppermost level a cylindrical substrate. Fig 7 of Carpenter clearly shows the welding rod and gun mounted 18 degrees below the uppermost level and the molten material is moved upwards in Carpenter and Nadeau.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 7:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/  
Examiner, Art Unit 3742

/Henry Yuen/  
Supervisory Patent Examiner,  
TC 3700

1/1/2009